Bay Area Air Quality Management District
Risk Screening Assessment, A# 9926
Gilroy High School, P# 16183
July 12, 2004

This document describes the basis for the health risk screening assessment prepared for Gilroy High School, 750 West Tenth Street, Gilroy, California. This facility has requested to operate a new emergency standby generator diesel engine. In order to do this, the facility must get a permit from the Bay Area Air Quality Management District (BAAQMD). The BAAQMD, as a routine part of the evaluation of a permit application, prepared this screening risk assessment.

Particulates from diesel engine exhaust, a toxic air contaminant and a carcinogen, will be emitted during the operation of the engine. BAAQMD staff evaluates the possible impact of the diesel exhaust particulate emissions that will occur during routine operation of the diesel engine. The diesel exhaust particulate impact is expressed in terms of the increased risk of contracting cancer by individuals who live or work near the proposed engine.

The estimated diesel exhaust particulate emissions that can be expected from this source are 2.1 pounds per year. Ambient air concentrations of diesel exhaust particulate were predicted using the ISCST3 air dispersion computer model. This model uses information about the facility and the emission rates of toxic air contaminants to estimate what concentrations would be expected in the air at various locations around the site. The estimated concentrations of diesel exhaust particulate are used to calculate the possible cancer and non-cancer health risk that might be expected to arise from this exposure.

The potential cancer risk was calculated using standard risk assessment methodology. For residents, they include the assumptions that exposures are continuous for 24 hours per day, 7 days per week for 70-years. For students, the assumptions include higher breathing rates for children and that exposures are for 36 weeks per year over a 9-year period. The cancer risk is based on the "best estimates" of plausible cancer potencies as determined by the California Office of Environmental Health Hazard Assessment (OEHHA). The actual cancer risk, which cannot be determined, may approach zero. This type of analysis is considered to be health-protective.

The potential for noncancer health effects is evaluated by comparing the long-term exposure level to a Reference Exposure Level (REL). A REL is a concentration level at or below which no adverse health effects are anticipated. RELs are designed to protect sensitive individuals within the population. Comparisons to RELs are made by determining the hazard index, which is the ratio of the estimated exposure level to the REL.

The maximum project impacts are for students who attend Gilroy High School[1]. For these students, the increased maximum cancer risk is 5 chances in a million and the hazard index is 0.003. The proposed operation would also result in an increased maximum cancer risk of 3 chances in a million and a hazard index of 0.002 for residences near the facility[2]. For any off-

[1] Other than Gilroy High School, which is also the location of the proposed project, the nearest school is Glen View Elementary, 600 West Eighth Street, Gilroy, California. Since Glen View Elementary is located more than 1000 feet from the proposed source, this school is not subject to BAAQMD's Risk Management Policy, and the health risks for students at Glen View Elementary were not evaluated.

[2] The reported health risk values for residences are based on the maximum off-site ground level concentration, which is located on the northern property line of this facility.

site work places near this facility[3], the proposed operation would result in an increased maximum cancer risk of 2 chances in a million and a hazard index of 0.001 for off-site workers[4]. These health risk values, presented in the table below, meet the criteria for acceptable levels established in the BAAQMD's Risk Management Policy.

Health Risk Results		
Receptor	Increased Maximum Cancer Risk	Hazard Index
Gilroy High School Student	5 chances in a million	0.003
Residential	3 chances in a million	0.002
Off-Site Worker	2 chances in a million	0.001

[3] No off-site work sites were identified specifically. The reported health risk values are determined based on the maximum off-site ground level concentration.

[4] BAAQMD's Risk Management Policy does not apply to on-site workers such as staff of Gilroy High School.